Rhodplumsite $Pb_2Rh_3S_2$

Crystal Data: Hexagonal. *Point Group:* $\overline{3}\ 2/m$. As grains, to 40 μm, in a platinum nugget.

Physical Properties: Hardness = n.d. VHN = n.d. D(meas.) = n.d. D(calc.) = 9.74

Optical Properties: Opaque. *Color:* White in reflected light. *Pleochroism:* Notable; from cream-pink to grayish blue. *Anisotropism:* Strong.
R_1–R_2: (400) — , (420) — , (440) 38.6–44.5, (460) 39.2–45.2, (480) 39.5–46.3, (500) 39.5–47.1, (520) 39.2–48.2, (540) 38.6–49.4, (560) 37.8–50.6, (580) 36.8–51.7, (600) 36.2–52.7, (620) 35.9–53.4, (640) 36.2–54.6, (660) 36.8–55.7, (680) 37.7–56.6, (700) 38.5–57.3

Cell Data: *Space Group:* $R\overline{3}m$. $a = 5.73(1)$ $c = 14.00(1)$ $Z = 3$

X-ray Powder Pattern: Ural Mountains, Russia.
2.86 (10), 2.33 (6), 2.01 (6), 4.02 (3), 2.44 (3), 1.807 (3), 4.64 (2)

Chemistry:

	(1)	(2)
Rh	40.27	39.21
Ir	0.27	
Pt	0.24	
Pb	51.48	52.64
S	8.05	8.15
Total	100.31	100.00

(1) Ural Mountains, Russia; by electron microprobe; corresponds to $Pb_{1.95}(Rh_{3.06}Ir_{0.01}Pt_{0.01})_{\Sigma=3.08}S_{1.97}$. (2) $Pb_2Rh_3S_2$.

Occurrence: In a platinum nugget in a placer probably derived from the nearby Omutninskii gabbro-pyroxenite-dunite massif.

Association: Platinum, tulameenite, iridium–osmium, laurite, chromite.

Distribution: From the Omutninskaya platinum-bearing placer, Omutnaya River, 20 km south of Polevskoi, Sysert' district, Ural Mountains, Russia [TL].

Name: For rhodium and lead, *plumbum*, in the composition.

Type Material: Institute of Geology of Ore Deposits, Petrology, Mineralogy, and Geochemistry, Moscow, Russia.

References: (1) Genkin, A.D., L.N. Vyal'sov, T.L. Evstigneeva, I.P. Laputina, and G.V. Basova (1983) Rhodplumsite, $Rh_3Pb_2S_2$, a new sulfide of rhodium and lead. Mineral. Zhurnal, 5(2), 87–91 (in Russian with English abs.). (2) (1984) Mineral. Abs., 35, 88 (abs. ref. 1). (3) Pekov, I.V. (1998) Minerals first discovered on the territory of the former Soviet Union. Ocean Pictures, Moscow, 174.